

BAG CARRYING HANDLEBackground of the Invention5 1. Field of the Invention

This invention relates generally to a handle, and more particularly to a handle for carrying a flexible bag having a spout on which the handle is positioned.

2. Description of the Prior Art

10 It is well known to package and ship liquid in flexible bags. A flexible bag provides for an easy storage container for the liquid to be shipped. The bag is in turn packaged inside of a box for shipment. Many bags have a spout heat sealed thereto, for providing access to the liquid inside of the container. One of the problems associated with such a packaging system is that it is necessary to remove the bag from the box and then carry the bag to the end use location. As may be expected, the bag, filled with
15 liquid, is sometimes difficult to handle as there is no good place to grasp the bag. Further, the bags can become heavy once they increase in size. For instance, a 5 liter bag will weigh approximately 10 pounds. One particular spout may be used for many different bags and different applications. Therefore, attaching a handle directly to the spout would be inconvenient as the bag may be used for many end purposes. That is, the
20 bag may be slid into some dispensers and placed into others. Further, the spout may or may not be used to guide the insertion of the bag into a dispenser. A handle, integral with the spout, would be in the way when it is slid into some dispensers.

The present invention addresses the problems associated with the prior art and provides for a bag carrying handle to provide for easy handling of bags and for carrying
25 and loading the bags into a dispenser or other holding devices.

Summary of the Invention

The invention is a bag carrying handle for carrying a flexible bag having a spout. The spout has a cylindrical surface with an upper and lower rim. The handle includes an arcuate member having first and second ends, the ends forming a slot. A grip section

includes a base member having first and second ends. The first side has a first end operatively connected to the first end of the grip section and a second end operatively connected to the arcuate member. A second side has a first end operatively connected to the second end of the grip section and a second end operatively connected to the arcuate member. The ends of the arcuate member have a first position and a second position, wherein when in the first position, the ends of the arcuate member are closer together than when in the second position, whereby a spout is insertable in the grip section and when moved to the arcuate member, the arcuate member moves to its second position to allow movement into the arcuate member, wherein the arcuate member is then in its first position to secure the handle to the spout.

In another embodiment, the invention is a bag carrying handle for carrying a flexible bag having a spout. The spout has a cylindrical surface with an upper rim and a lower rim. The handle includes a spout supporting member, the spout supporting member moveable between a first, open position and a second, closed position wherein the spout supporting member is adapted and configured to encircle a spout. A grip section is operatively connected to the spout supporting section, the grip section defining an opening for receiving a user's fingers. A lock mechanism secures the spout supporting member in the closed position after the spout is placed therein.

In another embodiment, the invention is a bag carrying handle for carrying a flexible bag having a spout. The spout has a cylindrical surface with an upper rim and a lower rim. The handle includes a grip section having a base member, the grip member defining an opening for a user's hand. A neck member defines an opening for receiving a cylindrical surface of a spout. The neck member has a first position for allowing clearance of the spout to enter and a second position for securing the neck around the spout, whereby a bag may be moved by the bag carrying handle.

In another embodiment, the invention is a method of moving a flexible bag having a spout with an upper rim and a lower rim. The method includes placing a handle around the spout to substantially encircle a cylindrical surface between the rims. Securing the

spout to the handle and lifting the handle and spout, whereby the bag is more easily moved.

Brief Description of the Drawings

5 Figure 1 is a perspective view of one embodiment of a handle according to the present invention;

 Figure 2 is a top plan view of the handle shown in Figure 1;

 Figure 3 is a side elevational view of the handle shown in Figure 1;

 Figure 4 is a perspective view of another embodiment of a handle according to the present invention;

10 Figure 5 is a top plan view of another embodiment of a handle according to the present invention;

 Figure 6 is a perspective view of the handle shown in Figure 5;

 Figure 7 is a perspective view of another embodiment of a handle according to the present invention;

15 Figure 8 is a top plan view of the handle shown in Figure 7;

 Figure 9 is a perspective view of another embodiment of a handle according to the present invention;

 Figure 10 is a top plan view of the handle shown in Figure 9;

 Figure 11 is side elevational view of the handle shown in Figure 9;

20 Figure 12 is a top plan view of a bag which may be carried by one of the handles of the present invention;

 Figure 13 is a side elevational view of the spout of the bag shown in Figure 12;

 Figures 14a-14c are a schematic representation of attaching the handle shown in Figure 1 to a spout;

25 Figures 15a-15b are a schematic representation of attaching the handle shown in Figure 4 to a spout; and

 Figures 16 is a top plan view of the handle shown in Figure 6 in a closed position.

Detailed Description of a Preferred Embodiment

Referring to the drawings, wherein like numerals represent like parts throughout the several views, there is generally disclosed at 10 a bag carrying handle. The handle 10 includes a grip section 11 operatively connected to a neck section 12. The handle 10 is made from a suitable material such as nylon, for instance Super Tough Amorphous Nylon Zytel® ST901LBK010 from Dupont. It is also, of course, understood that other suitable materials may also be used. The material must not be too brittle so that it will break and also must not be too flexible so that it will hold the spout and bag. The handle is preferably formed as a one-piece and integral unit. The grip section 11 has a base member 13 that has three concave surfaces 13a that form surfaces that are readily adaptable to a user's fingers. The base member 13 is sufficiently wide to accommodate three fingers of a user's hand. It may therefore be made in a suitable size; one size that has been found to be useful is for the base member 13 to have a width of from 2 1/2 to 3 inches. First and second sides 14, 15 extend from ends 13a and 13b the base 13 at an inward angle and connect to the neck section 12. The neck section 12 includes a generally arcuate member 16, preferably a circular sector. However, the arcuate member 16 does not have a complete circumference and has a slot 16a formed proximate its ends 16b, 16c. The slot 16 is formed between first and second throat members 17, 18, which are operatively connected to the ends 16b, 16c.

Referring now to Figures 12 and 13, there is generally shown a flexible bag 20. The flexible bag 20 may take the size and shape of any suitable shape, well known in the art. The bag is preferably formed from a suitable plastic material and has a heat seal 21 that extends around the perimeter of the bag, although it is understood that other well known construction may also be used. A spout 22 is operatively connected to the bag 20 by suitable means such as heat sealing. The spout 22 may be any suitable spout, also well known in the art. One suitable spout is found in a bag, Model 410060, from Scholle of Chicago, Illinois, with a Scholle 900 spout. The spout provides access into the interior of the bag where the liquid to be stored is filled. The spout 22 has a suitable closure or cap (not shown) to prevent the liquid from exiting the bag 20. The spout 22 has a lower

flange 23 operatively connected to a circular side wall 24. A lower rim 25 is positioned between the flange 23 and the upper rim 26. The portion of the side wall 24 that is between the lower rim 25 and upper rim 26 is designated 24a and will be referred to as engagement cylinder of the spout 22. The engagement cylinder 24a has a diameter "D" and a distance "H" between the upper rim 26 and lower rim 25.

The arcuate member 16 has an inner diameter that is approximately equal to or slightly less than the diameter "D" of the engagement cylinder 24a. The width "W" of the handle 12 is slightly less than the height "H" of the engagement cylinder 24a. The throat members 17, 18 form a slot 16a that is approximately one-half of the diameter of the arcuate member 16. The handle 10 is constructed so that the throat members 17, 18 are flexible enough on the sides 14, 15 to be deflected outward and allow the spout to pass from the grip section 11 into the neck section 12. The handle 10, as well as all other embodiments to be described hereafter, are all placed on the spout 22 after the spout 22 has been manufactured and attached to the bag 20.

Referring now to Figure 4, there is shown another embodiment of a bag carrying handle 110. The handle 110 has a neck section 112 and a grip section 111 operatively connected to each other. The grip section 111 has a base member 113 that has a first section 113a and a second section 113b. The first section 113a is operatively connected to the second side 115 and the second section 113b is operatively connected to a first side 114. Concave surfaces 113c are similar to the concave surfaces 13a. The neck section 112 includes an arcuate member 116, preferably a circular sector, having a slot 116a defined by first and second throat members 117, 118. As can be seen, the base member 113 is split into two sections 113a, 113b. A lock mechanism 119 is provided to connect the first section 113a to the second section 113b, usually after the spout 22 is in position in the neck section 112. The lock 119 includes a first member 120 that engages a second member 121. The first member 120 is operatively connected to the first section 113a and is an elongate member having a slot 120a formed therein. Two projections 122, which together form the general shape of an arrowhead, are operatively connected to the first member 120. The projections 122 each have an engaging surface 122a that is generally

perpendicular to the first member 120. The slot 120a allows for the projections to be compressed together as they are pushed through the opening 121, or the second member. The opening 121 is sized and configured to accept the projections 222 in the compressed state. Then, as the first member is pushed further through the opening 120, the
5 projections 122 will expand outward to their original condition and the engaging surfaces 122a will engage on the back side of the opening 121, thereby locking the base 113 into a blocked condition. The opening 121 has a cavity 121a that is larger than the opening 121, thereby providing a surface on which the projections 222 engage. This is similar to the locking mechanism shown more clearly in Figure 6.

10 Because the base member 113 is split, the throat sections 117, 118 are more easily deflected away from each other to allow for the spout 22 to move from inside of the grip section 111 to inside of the neck section 112. Then, once the spout is inside of the neck section 112, the first and second members 120, 121 are engaged to secure the locking mechanism in position. Again, the handle 110 is preferably formed as a one-piece and an
15 integral unit.

Referring now to Figures 5 and 6, there is another embodiment of a bag carrying handle according to the present invention designated at 210. The handle 210 has a grip section 211 operatively connected to a neck section 212. The handle 210 is preferably of a one piece and integral unit. The grip section 211 includes a base member 213 having
20 three concave surfaces 213a, similar to concave surfaces 13a. First and second sides 214, 215 extend from the base 213 at an inward angle and connect to the neck section 212. The neck section 212 includes a generally arcuate member 216 in the general shape of a circular sector. The arcuate member does not have a complete circumference and has an opening formed between first and second throat members 217, 218. The position shown
25 in Figure 5 is in an open position, such that the spout 22 will fit inside of the arcuate member 216. A locking mechanism, generally designated at 219 includes a first member 220 and a second member 221. The first member 220 is operatively connected to the second throat member 218 and is an elongate member having a slot 220a formed therein. Two projections 222, which together form the general shape of an arrowhead, are

operatively connected to the first member 220. The projections 222 each have an engaging surface 222a that is generally perpendicular to the first member 220. The slot 220a allows for the projections to be compressed together as they are pushed through an opening 221, or the second member. The opening 221 is sized and configured to accept the projections 222 in the compressed state. Then as the first member is pushed further through the opening 220 so that it exits the back side of the opening 221, the projections will expand outward to their original condition and the engaging surfaces 222a will engage on the back side of the opening 221, thereby locking the arcuate member 216 in a second, closed position which has a smaller area so as to capture and hold the spout 22.

The locking mechanism for the neck section 212 as well as the locking mechanism for the embodiments to be described hereafter allow for a complete or substantially complete encircling of the spout 22 and therefore a more secure connection.

Referring now to Figures 7 and 8, still another embodiment of the present invention shows a handle 310. The handle 310 will not be discussed in detail as it is very similar to the handle 210. The difference being a different locking mechanism is depicted. The locking mechanism 320 includes a first slot 330 formed in the second throat member 318. The surface at the top of a slot 330 has a plurality of teeth 331. The other portion of the locking member includes a second slot 332 formed in the first throat member 317. At the bottom of the slot 332 are formed a plurality of teeth 333. In order to close the arcuate member 316 from its open position, as shown in Figure 8 to a closed position, the teeth 331, 333 are moved together and the teeth 331, 333 prevent the arcuate member 316 from going back to its first, larger opening. The throat member 318 above the teeth 331 is forced into the slot 332 and the top portion of the throat member 317 provides a downward force to prevent the teeth 331, 332 from becoming disengaged.

Referring now to Figures 9-11, there is shown still another embodiment of the present invention, namely a handle generally designated at 410. The handle 410 includes a grip section 411 operatively connected to a neck section 412. The handle is preferably formed as an integral and one-piece unit. The grip section 411 has a base member 413 that has three concave surfaces 413a that form surfaces that are readily adaptable to a

user's finger. The base member 413 is sufficiently wide to accommodate three fingers of a user's hand. First and second sides 414, 415 extend from the base 413 at an inward angle and connect to the neck section 412. The sides 414, 415 terminate in the throat members 417, 418. The neck member 412 is generally circular in its closed position.

5 However, in the open position as partially shown in Figures 9-10, the neck member 412 has a generally circular sector 412a operatively connected to an end member 412b. The end member 412b is free to move, and thereby expand the opening in the neck area 412. A locking mechanism 419 includes a first member 420 and a second member 421. The first member 420 is an elongate member having a top and bottom groove 420a. The
10 second member 421 is formed in the throat 418 and includes a cavity 421a that has two projections 421b that project inward. The first member 420 is inserted into the cavity 421a and is slightly compressed as it passes past the projections 421b. Then, when the grooves 420a align with the projections 421b, the locking member is in position and the neck section 412 is in a locked position, as shown in Figure 10.

15 All of the embodiments of the handle, described so far, have been with respect to a circular spout 22. It is understood that the present invention would also include embodiments where the spout was not circular. The neck section of each of the embodiments would be modified so that the inner configuration of the neck section would substantially match the outer configuration of the spout. For instance, if the spout
20 was square, the neck section 12, 112 would be generally square and the throat areas 17, 18 and 17, 118 would be expandable to allow the square spout to enter the neck section wherein the throat sections would then move back to their original position and provide for a support for the square spout.

Similarly, for the embodiments wherein there is a lock on the neck section, the
25 neck section would be adapted and configured to conform to the equivalent configuration of the engagement cylinder of the different shaped spout which would be comparable to the engagement cylinder 24a. The embodiments previously described are adapted to secure the spout 22 about the engagement cylinder 24a to the handle. Therefore, it is

understood that the present invention is readily adaptable to spouts that may have any number of shapes around an engagement cylinder.

The method of use of each of the embodiments will now be described in detail. Referring to Figures 14a-14c, there is shown the method of use of the handle 10. The spout 22 is placed in the grip section 11. The spout 22 is then pushed upward, as viewed in Figure 14a. This causes the throat members 17, 18 to move outward to allow the spout to pass into the neck section 12. Then, as shown in Figure 14, the spout 22 is in the neck section 12 with the arcuate member 16 substantially surrounding the spout. As previously described, the handle 10 fits between the rims 25, 26 and provides for a grip on the spout sufficient to carry the bag 22 filled with liquid.

Referring now to Figures 4, 15a and 15b, there is shown a method of use of the handle 110. The handle 110, as shown in Figure 4, is opened up, as shown in Figure 15a by moving apart the sides 114, 115. This allows for a sufficient opening for the spout 22 to pass into the neck section 112. Then, when the spout 22 is in the neck section 112, as shown in Figure 15b, the sides 114, 115, are moved from their open position to their locked position as shown in Figure 15b, wherein the spout is captured by the neck section 112 and is available for easy transport and handling.

Referring now to Figures 6 and 16, the method of use of the handle 210 is described, it being understood that the method of use of the handle 310 is substantially similar, except for the engagement of the locking mechanism. As shown in Figure 6, the handle 210 is in an open position. As such, the opening in the neck section 212 is sufficient to receive the spout 22. Then, the throat members 217, 218 are moved closer together until the locking mechanism engages, as shown in Figure 16. This locks the handle 210 in a closed position, whereby the spout 22 is supported by the handle 210 and may easily be handled and transported.

Referring now to Figures 9 and 11, the method of use of the handle 410 will be described. Figure 9 shows the handle 410 in an open position. It is understood that the end 412b may be moved even further upward, as viewed in Figure 9 to open up the neck section 412 even further. The spout 22 is then placed in the neck section 412 and the end

412b is rotated downward until the first member 420 is inserted into the second member 421 to thereby lock the neck section 412 into a locked and closed position, as shown in Figure 10, whereby the spout and bag may easily be handled and transported.

5 The above specification, examples and data provide a complete description of the manufacture and use of the composition of the invention. Since many embodiments of the invention can be made without departing from the spirit and scope of the invention, the invention resides in the claims hereinafter appended.